

CLAIMS

What is claimed is:

1. A contactless apparatus for measuring sheet resistance and p-n junction conductance comprising:
 - means for illuminating the area of semiconductor structure with intensity modulated light;
 - means for detecting SPV signals inside and outside the illumination area optically coupled to the illuminating means; and
 - means for measurement of the SPV signals inside and outside the illumination area connected to the means for detecting SPV signals.
2. The apparatus of claim 1 wherein the illumination means comprises a light emitting diode with a driver forming the sinusoidal illumination and an optical fiber directing the light onto the wafer surface.
3. The apparatus of claims 1 and 2 wherein the means for detecting of SPV signals comprises a transparent conducting electrode optically coupled with a light source used for detecting SPV signals inside the illumination area and a non transparent electrode used for detecting SPV signal outside the illumination area.
4. The apparatus of claim 3 wherein the transparent conducting electrode is a glass or quartz disk with ITO coating and the non transparent electrode is a metal ring coaxially installed to the glass or quartz disk.
5. The apparatus of claim 4 wherein the transparent conducting electrode is a glass or quartz disk with an ITO coating and the non transparent electrode is a metal arc coaxially installed to the glass disk.

9. The apparatus of claim 1, 3, 4, and 5 wherein the illumination means comprises a laser diode with a driver forming a sinusoidal illumination and an optical fiber directing the light onto the wafer surface.
10. The apparatus of claim 4 wherein the means for detecting SPV signals includes a grounded metal ring coaxially installed to the disk between the disk and the non transparent electrode metal ring.
11. The apparatus of claim 5 wherein the means for detecting SPV signals includes a grounded metal arc coaxially installed to the disk between the disk and the non transparent electrode metal arc.